CLAIMS

1. A method of manufacturing a silicon carbide semiconductor in which an electrode is formed in a contact hole in an insulating film on a semiconductor substrate formed from a silicon carbide, the method comprising:

forming a metal film in the contact hole and on the insulating film of the semiconductor substrate;

chemically combining the metal film formed in the contact hole with a surface of the semiconductor substrate below the contact hole by subjecting the semiconductor substrate to a heat treatment; and

removing the metal film formed on the insulating film with an etching liquid for dissolving the metal.

2. The method according to claim 1, wherein the forming of the metal film further comprises forming the metal film to be comprised of a nickel single body.

3. The method according to claim 2, wherein the etching liquid comprises any one of sulfuric acid, phosphoric acid, nitric acid and acetic acid.

4. The method according to claim 2, wherein the etching liquid comprises a mixture liquid of sulfuric acid and hydrogen peroxide solution.

5. The method according to claim 1, further comprising etching an upper surface of the insulating film after the removing of the metal film formed on the insulating film with etching liquid for dissolving the metal.

6. The method according to claim 5, wherein the chemically combining of the metal film formed in the contact hole with the surface of the semiconductor substrate comprises subjecting the semiconductor substrate to a heat treatment of 900°C or more.

7. The method according to claim 1, wherein the chemically combining of the metal film formed in the contact hole with the surface of the semiconductor substrate comprises subjecting the semiconductor substrate to a heat treatment of 900°C or more.